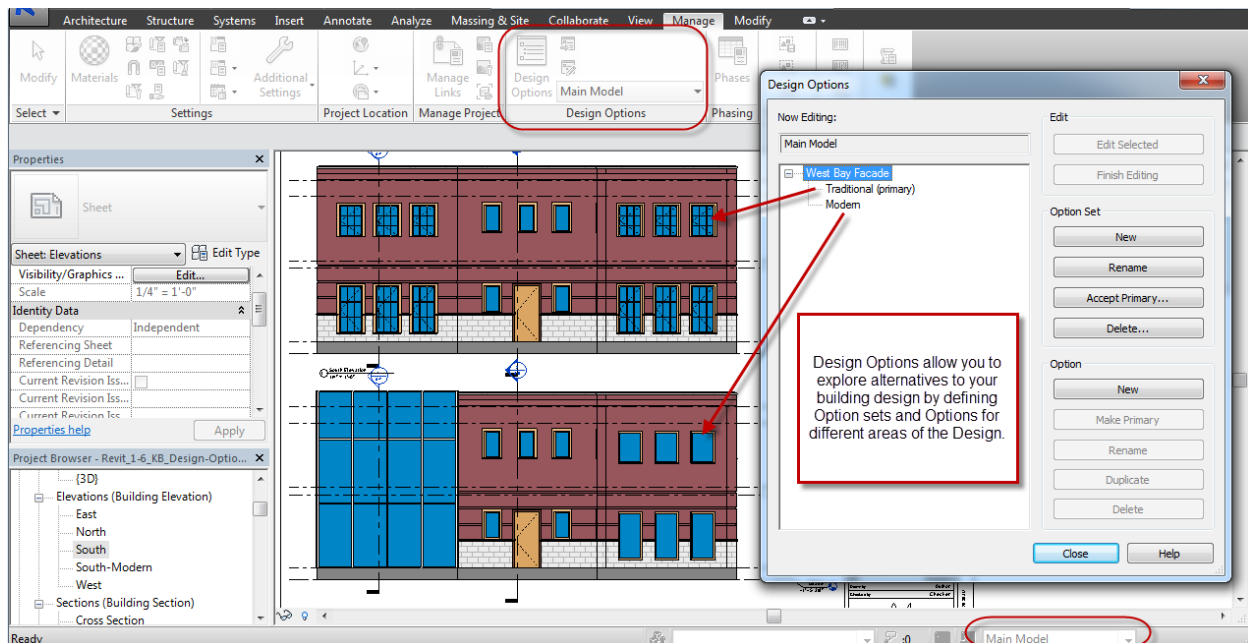


AGENDA:

1. Design Options Overview
2. Working with Design Options
3. Viewing Design Options

1. Design Options

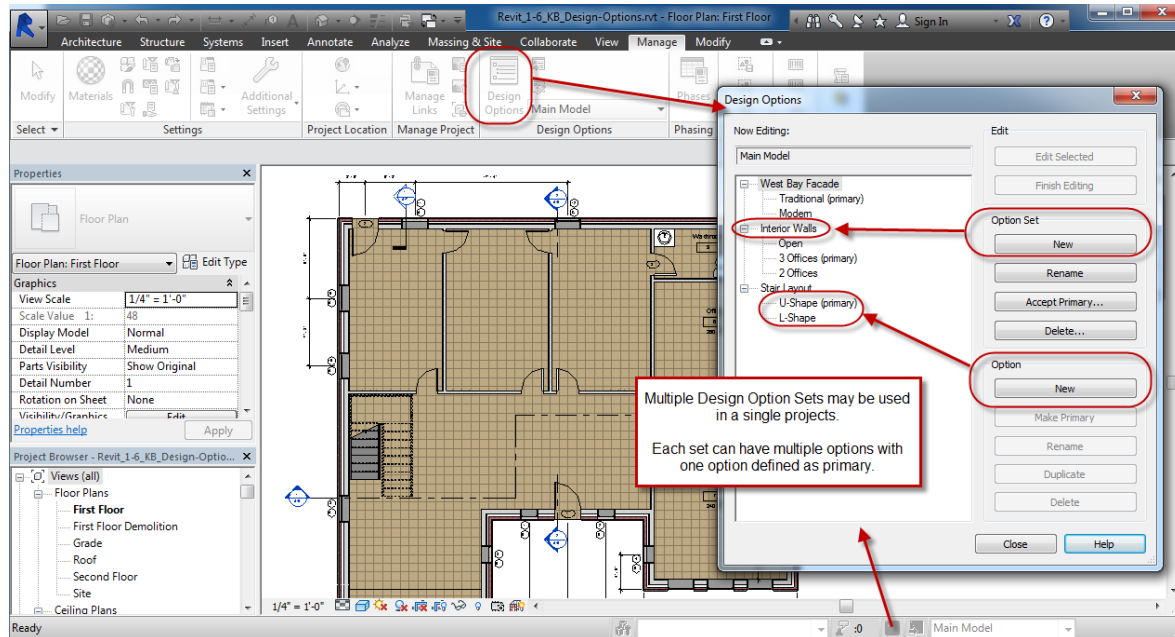
Design Options allow you to show alternative designs for one or more areas of your building model in your main project file. Rather than saving two different versions of your project as Design A and Design B, you can work within a single file, and toggle the display of the design alternatives for different views.



Design Options are created and managed in the Design Options dialog accessed from the Manage tab or via the Design Options button in the lower right corner of the interface.

Design Options can be used wherever you would like to consider variations in a proposed building. The style or arrangement of windows, alternatives for the layout of walls in a floor plan, or the shape of a set of stairs, are all possible examples for the use of Design Options.

Multiple Design Option Sets can be created in a project. For each area of the building that will have multiple variations being considered, create a descriptively named Option Set. i.e. – Interior Walls, Window Style, Stair Shape, Roof Shape, etc.



The Option Sets are the headings in the Design Options dialog box. Below each Option Set you will have one primary Option which will be displayed in the project's views by default, and one or more Secondary options which can displayed as an override for a view.

When you create new objects, they are added to either the Main Model (default) or in one of the individual Design Options. You can transfer elements from the Main Model to one of the Design Options with the Add to Set tool on the Design Options panel or from the status bar.

Elements may also be moved from Design Option to another by Cutting elements to the clipboard with one option active, then switching to another Design option and using a Paste operations.

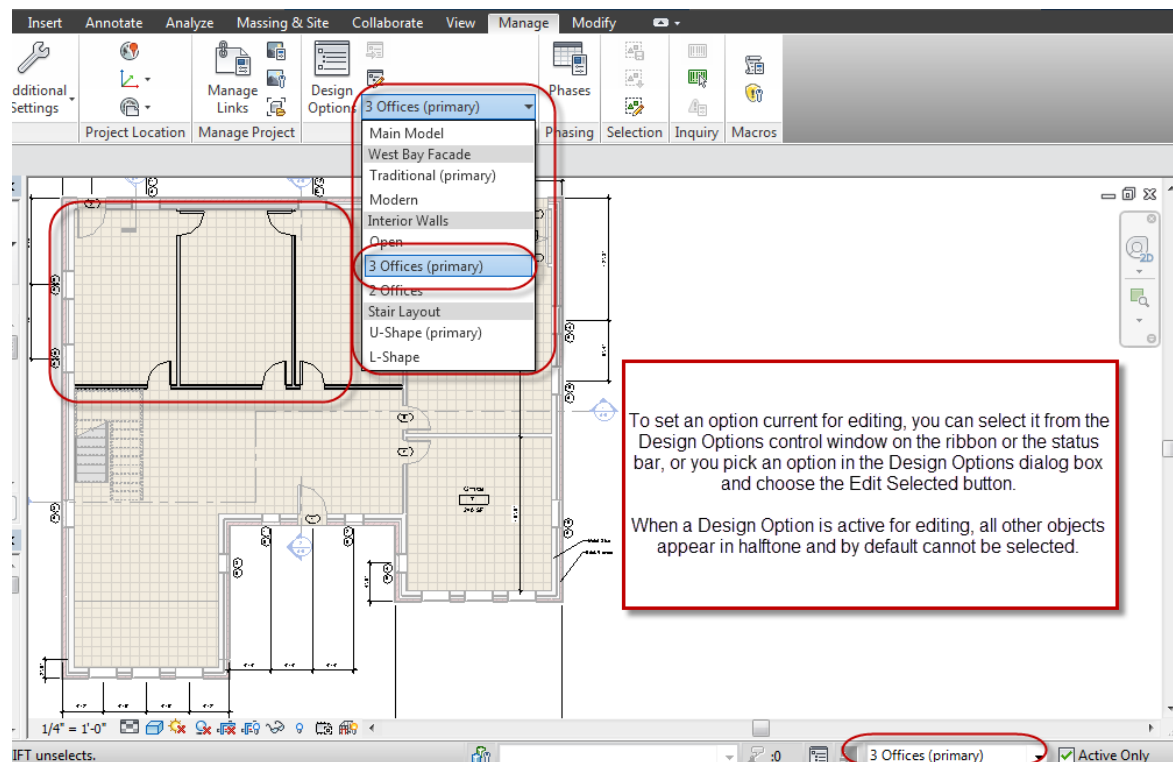
You can Duplicate an option in the Design Options dialog and it will automatically copy all elements from the option being copied to the new option. This can be a fast method to create alternative design options, especially if the different options share some objects in a similar position.

2. Creating and Working with Design Options

Before setting up Design Options, first draw as much of the building as possible, including all elements which will be common to two or more of the Design Options.

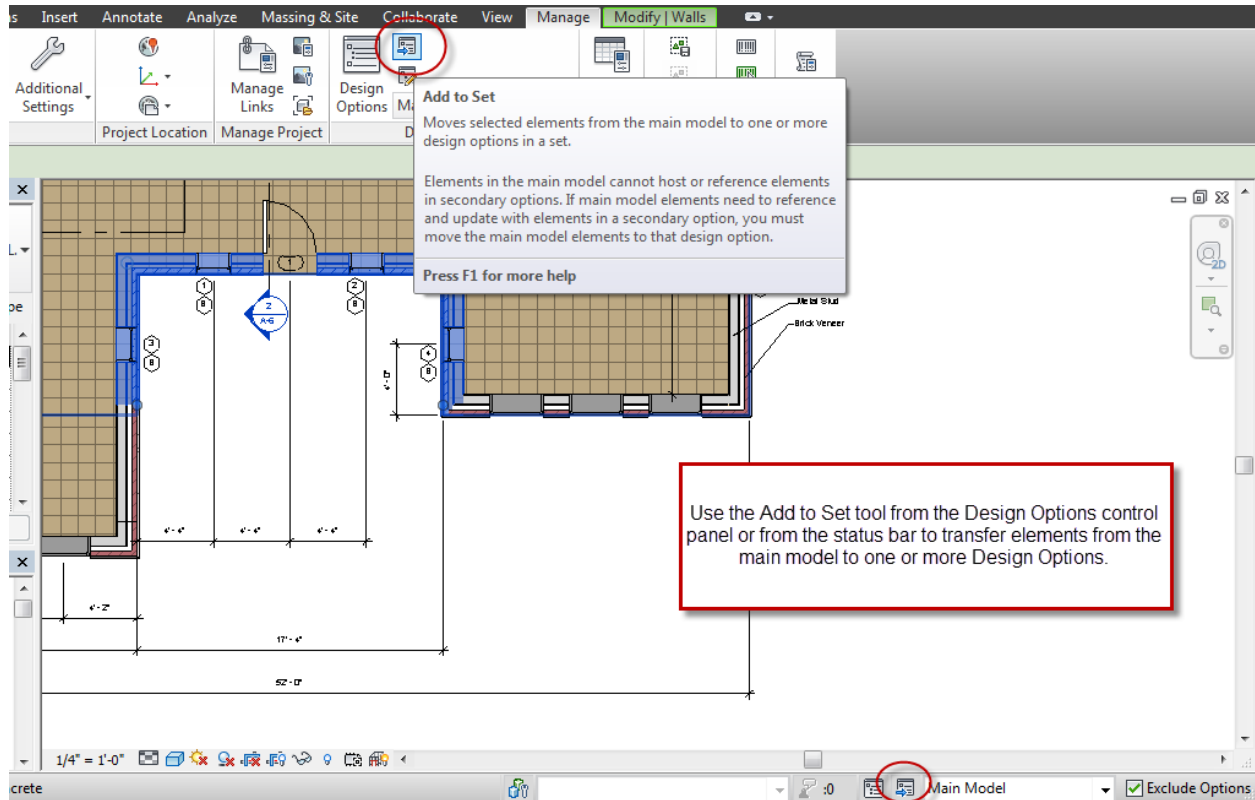
Use the Design Options dialog to create and name each of your Option Sets and Options. The first option you define for each Set will be set as the Primary option. To make a different option Primary, highlight the option in the Design Options dialog and choose “Make Primary”.

By default, when you are adding new building elements, they are added in the “Main Model” or top level of the project. To use Design Options, you need to move some elements into a specific option, or you need to make an Option active for editing and then create the new elements.



There are two control windows which display a list of all available Design Options. When you select an option in either of these control windows so it is displayed as current, any new elements you create will belong to that option. If the option is a primary option, the elements will be displayed in all views.

Only Primary options are displayed in the Main Model view. If building elements are added in a secondary option, they will be hidden in all of the Main Model views.



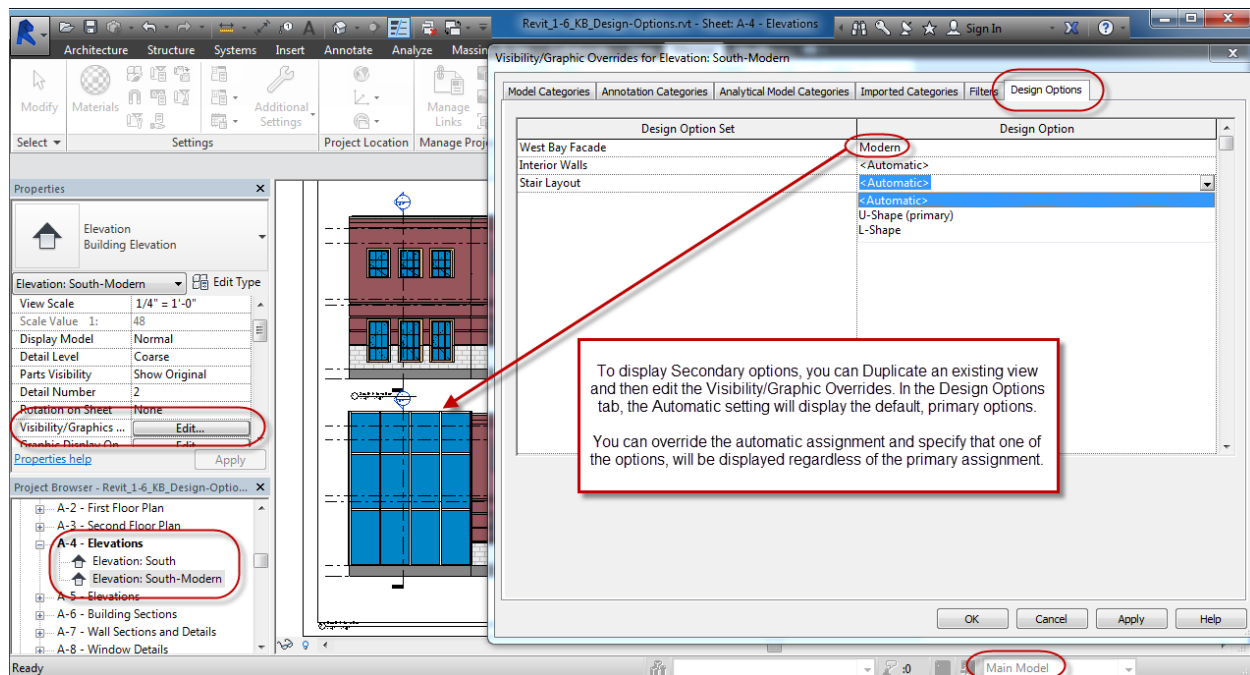
The Add to Set tool will allow you to transfer building elements from the Main Model to one or more Design Options in a selected Option Set. You can use the Add to Set tool with the Main Model option current. Pick the elements to transfer and then pick Add to Set. Select the Option set from a pulldown list, and then you select which options will receive the elements being transferred. By default, the selection set will be copied to all of the Options in the Option set but you can pick the ones you need.

If you only want to transfer elements from the main model to one design option, you can set that option current, clear the “exclude options” checkmark on the status bar, pick the main model elements to transfer and then pick the Add to Set tool. The selected objects will change from halftone to normal appearance indicating that they are part of the active set.

3. Viewing Design Options

By Default, all views will display the Primary Options when the Main Model is current in the Design Options control windows on the Ribbon and status bar. If you select a specific design option, any elements which belong to that option will be displayed normally and all other elements will display in a half-tone.

To display the same view, with two different design options on a single sheet, you can Duplicate the view with the Primary assignment and then use Visibility Graphic Overrides to explicitly select any of the available options for any of the Object sets.



Exercise Notes

In the following exercise you are going to experiment with working with Phases and Phase Filters.

1. Open the Office project that we worked on in a previous class. Save the file with a new name by adding "Design-Options" to the name.
2. On the manage tab of the Ribbon, pick the Design Options button to open the Design Options dialog box. Under Option Set, pick New.
3. Select Option Set 1 and pick Rename. Set the name to Façade Style. Pick Option 1 and choose Rename again. Set the Option name to Traditional.
4. Under Option, pick New and create a second option called Modern. Traditional should be the Primary option in the Façade style Option Set.
5. Create a second Option Set and rename it so it is called "Interior Walls". Create two new option in this Option set and then use Rename under Option to change the names to "Open", "2 Office", and "3 Office". Pick the 3 Office option and choose "Set Primary" to make this layout the default option. Pick Ok to close the Design Options dialog.
6. To set the current Design Option you can use the pulldown on the Design Options panel, or from any other tab, you can select an Option from the Design Options control window in the lower right corner of the status bar. Select the 3 Office Design Option to set it current. All existing entities should appear greyed out as they belong to the Main Model.
7. If you wish to select an existing entity in the Main Model, when a Design Option is active, clear the checkmark in the lower right corner. This is a filter which when enabled only allows you to pick objects that belong to the current Design Option. After clearing the filter, pick an existing interior wall and choose the Create Similar command. Add a single horizontal wall parallel to the back wall and offset by 18'-6", running from the exterior wall on the left side to the existing interior wall on the right side.
8. Add two vertical walls to divide the back section of the plan into three approximately equal size rooms. Add 5 doors to access the 3 rooms and to move between them.

9. To create a second configuration of walls for the 2 office layout, there are three methods which could be used – Draw the walls from scratch, Duplicate the 3 Office Design option and then rename and edit the copy, or you can use copy and paste to duplicate selected elements from the 3 office Design Option to the 2 office option.
10. Pick the horizontal wall and one vertical wall and hit CTRL-C to copy them to the clipboard. From the Design Option control window, choose 2 Office to set it as the active option.
11. From the Modify tab, choose the Paste flyout and then pick Paste Aligned to Same Place. Move the vertical wall to approximately the midpoint of the horizontal wall to create two equal size offices.
12. Set the Open Design Option active. Pick Paste Aligned to Same Place again. Delete the vertical wall.
13. We now have 3 separate possible layouts for the arrangement of the offices. Try toggling between the three Design Options in the control window to view the three arrangements.
14. Select the Main Model choice in the Design Options control window. Whichever options are set as primary options are the ones that will appear in the Main Model. Try setting different options as primary and watch the layout change to show the current primary layout.
15. To show different styles of windows on the front elevation, or even to show more extensive variations such as replacing a brick wall with a glass curtain wall, we can associate elements from the main model with a design option as well. Inserts such as doors or windows cannot be assigned to a design option unless their host wall is also assigned to that option.
16. Select one of the front exterior walls and choose the Add to Set tool by the Design Options control window on the status bar. By default, the selected wall will be added to both of the Façade Style design options for Traditional as well as Modern.
17. At this point, if you switch to the South Elevation and try toggling the two Façade style design options, both will appear identical. Set the Modern Design Option current. Pick the windows in the front elevation and change them from a casement style with multiple divisions to a fixed window style with a single large piece of glass.
18. Set the Traditional Design option active and the divided windows will appear. Set the Main Model active and whichever Façade Style option is set as primary will display in the elevation.

19. Open the Design Options dialog and change the Façade style primary option to Modern. When you close the dialog, the single pane windows will appear and the divided windows will be hidden.
20. Continue to experiment with Design Options by making a third design option for the Façade Style. Open the Design Options dialog, pick the Modern design option under Façade Style, and then choose Duplicate. Use the Rename option to name the new design option “glass wall” and then pick Close.
21. From the Design options control window set the Glass Wall active. Pick the front wall that we have been working on and delete it. Add a curtain wall with the Storefront style to replace the brick wall. Set the top constraint to the Roof level with a 2 foot top offset.
22. Select the Main Model option in the Design Options control window. The appearance will revert back to the modern style with brick wall and single pane windows as this is the primary option.
23. Try switching between all three of the Façade Style options. Open the main Design Options dialog and set the Glass Wall option as Primary. Close the dialog and set the Main Model active again in the Design Options control window.
24. To further experiment with Design Options, create a new Option Set called Stair Shape. Create two options called U-Shape and L-Shape. Create two sets of stairs inside the building, with stair layouts matched to the Stair Shape Design options.
25. Try working in different views and setting different combinations of options for each of the Design option sets.



② SW Perspective



① SE Perspective

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Green Inc. Meadow Centre Perspectives

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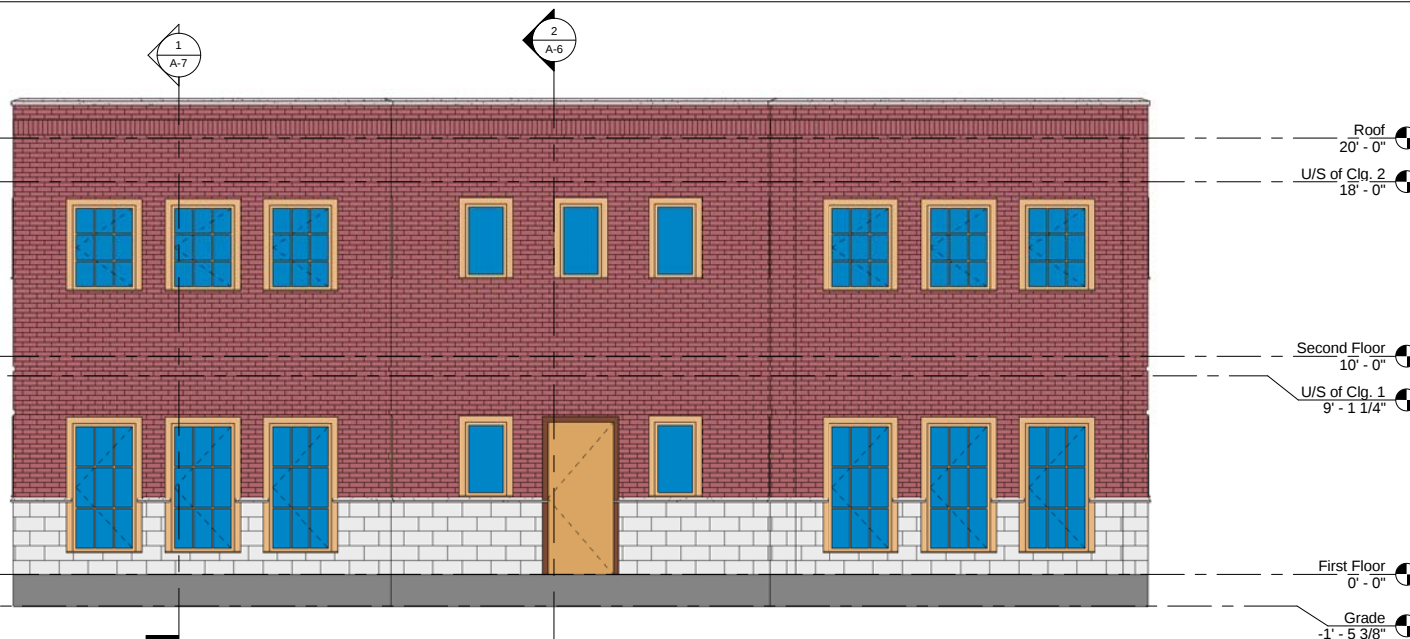
Green Inc. Meadow Centre Elevations

Project number	2011_001
Date	Issue Date
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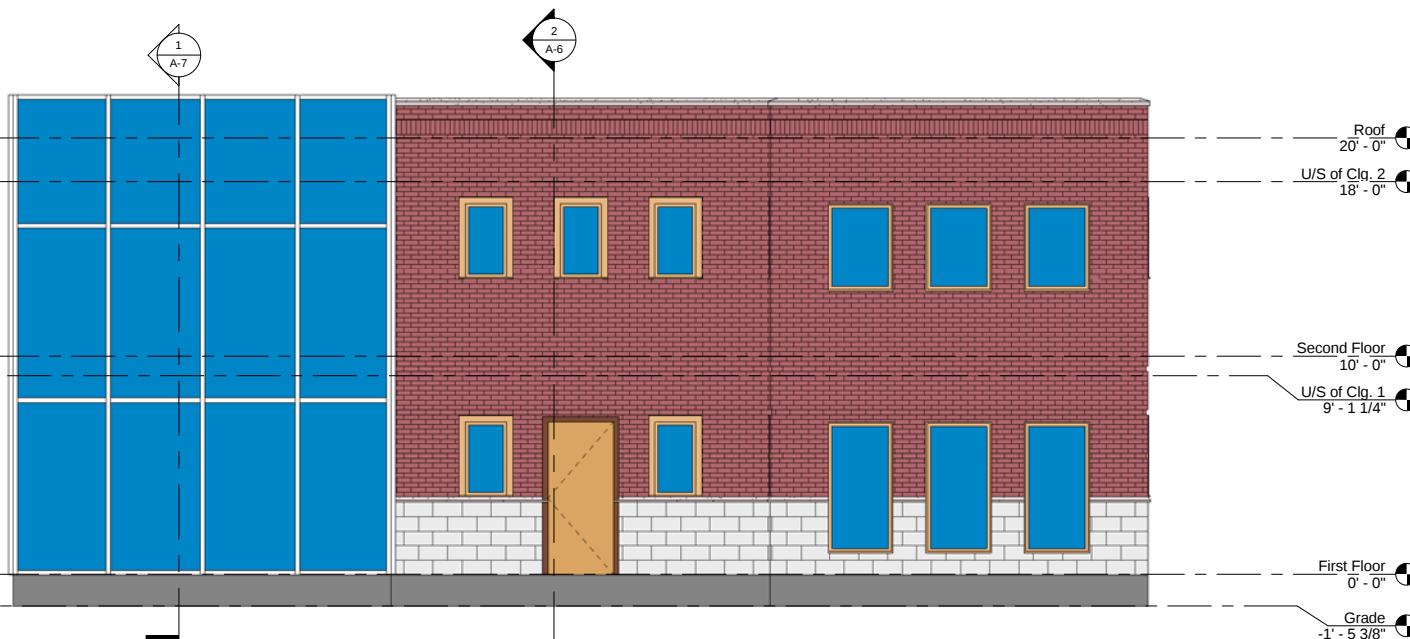
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Scale	1/4" = 1'-0"
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① South Elevation - Traditional
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② South Elevation - Modern
1/4" = 1'-0"